UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ECOLOGICAL SITE DESCRIPTION

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site ID: R051XA005NM

Site Name: Swale

Precipitation or Climate Zone: 9 to 13 inches

Phase:

PHYSIOGRAPHIC FEATURES

Narrative:

This site occurs in concave or depressional positions, which receive additional run-in from adjoining sites. This increases the effective soil moisture and influences the composition and production of the plant community. Some seasonal water ponding occurs in years of high rainfall above the mean. Slopes vary from 0 to 3 percent. Elevations range from 7,200 to 7,600 feet above sea level.

Land Form:

1. Depression
2.
3.

Aspect:

1. N/A
2.
3.

	Minimum	Maximum
Elevation (feet)	7,200	7,600
Slope (percent)	0	3
Water Table Depth (inches)	N/A	N/A

Flooding:	**Minimum**	**Maximum**
Frequency	Rare	Rare
Duration	Very brief	Brief

Ponding:	**Minimum**	**Maximum**
Depth (inches)	N/A	N/A
Frequency	Rare	Rare
Duration	Very brief	Brief

Runoff Class:

Negligible to medium.

CLIMATIC FEATURES

Narrative:

Mean annual precipitation varies from 9 to 13 inches. Departures from the average of 4 inches or more are common. Approximately 50 percent of this moisture occur during the vegetative growth period, April through September. Over 20 percent of the precipitation comes in the form of high intensity summer thunderstorms which influence the presence and production of warm-season plants. Winter and early spring moisture in the form of rain or snow influences the presence and production of cool-season plants. This moisture also influences maximum shrub growth.

Mean annual temperature varies from 64 degrees F in July to 21 degrees F in January. The average last killing frost in the spring is May 30th, and the first killing frost in the fall is September 30th. The frost-free period is approximately 120 days, but freezing temperatures have been recorded every month except July and August.

Wind velocities are relatively light most of the year with stronger winds occurring in the spring and early summer. These winds increase transpiration rates of plants and rapidly dry the surface soil.

Run-in from adjacent sites increases the effective soil moisture resulting in early green-up and high productivity.

Climate data was obtained from http://www.wrcc.sage.dri.edu/summary/climsmnm.html web site using 50% probability for freeze-free and frost-free seasons using 28.5 degrees F and 32.5 degrees F respectively.

	Minimum	Maximum
Frost-free period (days):	68	130
Freeze-free period (days):	95	154
Mean annual precipitation (inches):	9	13

Monthly moisture (inches) and temperature (^{0}F) distribution:

	Precip. Min.	Precip. Max.	Temp. Min.	Temp. Max.
January	.62	1.06	4.0	39.7
February	.57	1.14	7.9	45.3
March	.76	1.80	14.5	52.7
April	.82	1.75	21.8	62.6
May	.89	1.79	28.7	71.9
June	.90	1.29	32.9	81.9
July	1.67	2.90	40.8	85.4
August	1.85	3.18	40.2	83.2
September	1.26	1.60	33.6	76.4
October	1.06	1.53	25.0	65.7
November	.67	1.34	13.9	52.0
December	.64	1.15	6.0	41.6

Climate Stations:

				Period		
Station ID	291630	Location	Cerro, NM	From: 02/01/32	To:	12/31/00
Station ID	297323	Location	Red River, NM	From: 01/01/15	To:	12/31/00
Station ID	298668	Location	Taos, NM	From: 01/01/14	To:	12/31/00
Station ID	299085	Location	Tres Piedras, NM	From: 01/01/14	To:	12/31/00

INFLUENCING WATER FEATURES

Narrative:

This site is not influenced by water from a wetland or stream.

Wetland description:

System	Subsystem	Class
N/A		

If Riverine Wetland System enter Rosgen Stream Type:

N/A

REPRESENTATIVE SOIL FEATURES

Narrative:

The soils are deep and well drained. The surface layers are loam and clay loam. The subsoil is clay loam or clay, and the substratum is a heavy loam and clay loam. Permeability is moderately slow to slow. Available water-holding capacity is high. Effective rooting depth is 60 inches or more. The plant-soil-air-water relationship is favorable. Drainage might not be possible in certain areas of this site.

Parent Material Kind: Alluvium
Parent Material Origin: Mixed

Surface Texture:

1. Clay loam
2. Loam
3.

Surface Texture Modifier:

1. N/A
2.
3.

Subsurface Texture Group: Clayey
Surface Fragments <=3" (% Cover): N/A
Surface Fragments >3" (% Cover): N/A

Subsurface Fragments <=3" (%Volume): N/A
Subsurface Fragments >=3" (%Volume): N/A

	Minimum	Maximum
Drainage Class:	Well	Well
Permeability Class:	Slow	Moderately slow
Depth (inches):	60	>72
Electrical Conductivity (mmhos/cm):	0.00	2.00
Sodium Absorption Ratio:	N/A	N/A
Soil Reaction (1:1 Water):	6.6	8.4
Soil Reaction (0.1M CaCl2):	N/A	N/A
Available Water Capacity (inches):	9	12
Calcium Carbonate Equivalent (percent):	N/A	N/A

PLANT COMMUNITIES

Ecological Dynamics of the Site:

Plant Communities and Transitional Pathways (diagram)

Plant Community Name: Historic Climax Plant Community

Plant Community Sequence Number: 1 **Narrative Label**: HCPC

Plant Community Narrative: Historic Climax Plant Community
This site approaches a monoculture of western wheatgrass with scattered shrubs, mostly fourwing saltbush. Forbs are a very minor part of the potential.

Canopy Cover:	
Trees, shrubs and half-shrubs	5 %
Ground Cover (Aveage Percent of Surface Area).	
Grasses & Forbs	45
Bare ground	35
Surface cobble and stone	0
Litter (percent)	20
Litter (average depth in cm.)	4

Plant Community Annual Production (by plant type):

Annual Production (lbs/ac)

Plant Type	Low	RV	High
Grass/Grasslike	1,360	1,860	2,360
Forb	51	70	89
Tree/Shrub/Vine	255	349	443
Lichen			
Moss			
Microbiotic Crusts			
Total	1,700	2,325	2,950

Plant Community Composition and Group Annual Production:

Plant Type - Grass/Grasslike

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
1	PASM	Western Wheatgrass	1628 – 1744	1628 – 1744
2	ELEL5	Bottlebrush Squirreltail	116 – 233	116 – 233
3	2GP	Other Perennial Grasses	23 – 70	23 - 70

Plant Type - Forb

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
4	ERIGE2	Fleabane spp.	23 – 116	23 – 116
5	SPHAE	Globemallow spp.	23 – 116	23 – 116
6	2FORB	Other Forbs	23 – 70	23 - 70

Plant Type – Tree/Shrub/Vine

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
7	ATCA2	Fourwing Saltbush	233 – 349	233 – 349
8	ARFR4	Fringed Sagewort	116 – 233	116 – 233
9	ERICA	Rabbitbrush spp. (Green)	116 – 233	116 – 233
10	GUSA2	Broom Snakeweed	116 – 233	116 – 233
11	2SD	Other Shrubs	23 – 70	23 - 70

Plant Type - Lichen

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Type - Moss

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Type - Microbiotic Crusts

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Other species include: spike muhly, prairie junegrass, and sageworts.

Plant Growth Curves

Growth Curve ID **3504NM**

Growth Curve Name: **HCPC**

Growth Curve Description: **Cool-season grassland with scattered shrubs and a minor forb component.**

Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
0	0	3	5	10	10	25	30	12	5	0	0

ECOLOGICAL SITE INTERPRETATIONS

Animal Community:

Habitat for Wildlife:

This ecological site provides habitats which supports a resident animal community that is characterized by striped skunk, Nuttall cottontail, horned lark, lark bunting, and northern pocket gopher. When depressions are flooded mallard, teal and shorebirds use them.

Hydrology Functions:

The runoff curve numbers are determined by field investigations using hydrologic cover conditions and hydrologic soil groups.

Hydrologic Interpretations	
Soil Series	**Hydrologic Group**
Shawa	B

Recreational Uses:

This site has little potential for picnicking, hiking, and camping. Hunting and nature observation are some recreational uses of this site.

Wood Products:

This site produces no significant wood products in its potential plant community.

Other Products:

Grazing:

Approximately 90 percent of the vegetation produced on this site come from plants producing forage suitable for grazing or browsing by domestic livestock and wildlife. Due to additional run-in from adjacent sites, this site may experience early green-up of the vegetation. Grazing management should take this into consideration to prevent overgrazing and trampling damage prior to green-up of adjacent sites.

Deterioration is indicated by a decrease in western wheatgrass, spike muhly, and fourwing saltbush with a significant reduction in production. Species that increase or invade this site include blue grama, ring muhly, dropseed, rabbitbrush and broom snakeweed. Areas of bare ground also increase with deterioration. A planned grazing system with periodic deferment is best to maintain the desirable balance between plant species and to maintain high productivity.

Other Information:

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month

Similarity Index	Ac/AUM
100 - 76	0.9 – 1.7
75 – 51	1.6 – 2.9
50 – 26	2.8 – 6.1
25 – 0	6.1+

Plant Part	Code	Species Preference	Code
Stems	**S**	**None Selected**	**NS**
Leaves	**L**	**Preferred**	**P**
Flowers	**F**	**Desirable**	**D**
Fruits/Seeds	**F/S**	**Undesirable**	**U**
Entire Plant	**EP**	**Not Consumed**	**NC**
Underground Parts	**UP**	**Emergency**	**E**
		Toxic	**T**

Plant Preference by Animal Kind:

Animal Kind: Livestock
Animal Type: Cattle

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Western Wheatgrass	Pascopyrum smithii	EP	D	D	P	P	P	D	D	D	D	D	D	D
Spike Muhly	Muhlenbergia wrightii	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Bottlebrush Squirreltail	Elymus elymoides	EP	U	U	D	D	D	U	U	U	D	D	D	U
Fourwing Saltbush	Atriplex canescens	L/S	P	P	P	P	P	D	D	D	D	D	D	P

SUPPORTING INFORMATION

Associated sites:

Site Name	Site ID	Site Narrative

Similar sites:

Site Name	Site ID	Site Narrative

State Correlation:

This site has been correlated with the following sites: _____

Inventory Data References:

Data Source	# of Records	Sample Period	State	County

Type Locality:

State: **New Mexico**

County: **Taos**

Latitude: _____

Longitude: _____

Township: _____

Range: _____

Section: _____

Is the type locality sensitive? **Yes** ☐ **No** ☐

General Legal Description: _____

Relationship to Other Established Classifications:

Other References:

Data collection for this site was done in conjunction with the progressive soil surveys within the High Intermountain Valleys 51 Major Land Resource Area of New Mexico. This site has been mapped and correlated with soils in the following soil surveys: Taos

Characteristic Soils Are:	
Shawa	
Other Soils included are:	

Site Description Approval:

Author	Date	Approval	Date
Don Sylvester	5/15/84	Don Sylvester	5/15/84

Site Description Revision:

Author	Date	Approval	Date
Elizabeth Wright	07/10/02	George Chavez	2/12/03